

**MATERIAL SAFETY DATA SHEETS FOR  
anti-TPO COMPONENTS:**

**Sodium Azide** (Pgs. 2 - 8)

**Sulfuric Acid** (Pgs. 9 - 17)

**TMB** (Pgs. 18 - 21)

**Proclin 300** (Pgs. 22 - 25)

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THE FOLLOWING COMPOUND IS FOUND IN OUR  
CALIBRATORS, STANDARDS, POSITIVE CONTROL AND NEGATIVE CONTROL

**SECTION 1 : PRODUCT IDENTIFICATION**

**Name:** Sodium azide

**Synonyms:** Azide, sodium, Smite, RCRA Waste No. P105

**CAS No.:** 26628-22-8

**EC No.:** 247-852-1

**Molecular Weight:** 65.01

**Chemical Formula:** NaN<sub>3</sub>

**Product Codes:** 0639

**Manufacturer Information:**

Amresco Inc.

30175 Solon Industrial Parkway

Solon, Ohio 44139

For Information: (800) 448-4442 or (440) 349-1199

Emergency Telephone Number: CHEMTREC – (800) 424-9300

**SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS**

**Ingredient:** Sodium Azide

**CAS No.:** 26628-22-8

**Percent:** >99 %

**Hazardous:** Yes

**SECTION 3 : HAZARDS IDENTIFICATION**

**Label Precautionart Statements:**

HIGHLY TOXIC (USA),

VERY TOXIC (EU),

IRRITANT, IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

MAY CAUSE HERITABLE GENETIC DAMAGE.

VERY TOXIC BY INHALATION, IN CONTACT WITH SKIN, AND IF SWALLOWED

CONTACT WITH ACID LIBERATES VERY TOXIC GAS.

HEATING MAY CAUSE AN EXPLOSION

READILY ABSORBED THROUGH SKIN.

AVOID CONTACT WITH METALS.

TARGET ORGANS: NERVES, HEART.

IN CASE OF ACCIDENT , OR IF YOU FEEL UNWELL, SEEK MEDICAL ADVICE IMMEDIATELY  
(SHOW LABEL WHERE POSSIBLE).

WEAR SUITABLE PROTECTIVE CLOTHING, GLOVES AND EYE/FACE PROTECTION.

DO NOT BREATHE DUST.

**SECTION 4 : FIRST AID MEASURES**

**Skin Contact:**

In case of contact immediately flush eyes or skin with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before re-use.

**Inhalation:**

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

**Ingestion:**

If swallowed, wash out mouth with water provided the person is conscious. Call a physician

**SECTION 5 : FIRE FIGHTING MEASURES**

**Fire Extinguishing Media:**

Do not use water.

Dry chemical powder.

**Special Firefighting Procedures:**

Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

**Unusual Fire and Explosions Hazards:**

Container explosion may occur under fire conditions. Emits toxic fumes under fire conditions.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES**

**Instructions:**

Evacuate Area

Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

**Spills:**

Sweep up, place into a bag and hold for waste disposal.

Avoid raising dust.

Ventilate area and wash spill site after material pickup is complete.

**SECTION 7 : HANDLING AND STORAGE**

(Refer to Section 8)

**Additional Information:**

Azide reacts with many heavy metals such as lead, copper, mercury, silver, and gold to form explosive compounds. Copper and lead azides are more sensitive than nitroglycerine. Azide reacts with metal halides to give a range of metal azide halides, many of which are explosive. Incompatible with chromyl chloride, hydrazine, bromine, carbon disulfide, dimethyl sulfate, dibromomalonitrile. An explosion occurred when a mixture of sodium azide, methylene chloride, dimethyl sulfoxide and sulfuric acid were being concentrated on a rotary evaporator.

**SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION**

Wear appropriate NIOSH/MSHA-approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.  
Use only in chemical fume hood.  
Maintain safety shower and eye bath.  
Do not breathe dust.  
Do not get into eyes, on skin or on clothing.  
Avoid prolonged or repeated exposure.  
Wash thoroughly after handling.  
Highly toxic.  
Irritant.  
Keep tightly closed.  
Heat-sensitive.  
Store in a cool, dry place.

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Solid.  
**Odor:** Odorless.  
**Solubility:** 42 g/100 g water @ 17C (63F)  
**Specific Gravity:** 1.85

**SECTION 10 : STABILITY AND REACTIVITY**

**Incompatibilities:**  
Acid chlorides  
Halogenated solvents  
Avoid contact with metals  
Avoid contact with acid  
Explodes when heated.  
**Hazardous Decomposition Products:**  
Nitrogen oxides

**SECTION 11 : TOXICOLOGICAL INFORMATION**

**Acute Effects:** May be fatal if inhaled, swallowed or absorbed through skin.  
Causes eye and skin irritation.  
Material is irritating to mucous membranes and upper respiratory tract.  
Exposure can cause nausea, headache and vomiting.

**Chronic effects:**  
May alter genetic material.  
Target organs: Nerves, heart, brain

**Additional Information:**  
Laboratory experiments in animals have shown sodium azide to produce a profound hypotensive effect, demyelination of myelinated nerve fibers in the central nervous system, testicular damage, blindness, attacks of rigidity, hepatic and cerebral effects.

**RTECS #:** VY8050000 SODIUM AZIDE

**Toxicity Data:**  
ORL-WMN LDLO: 786 mg/kg (1989) & 14 mg/kg (1990)  
ORL-MAN LDLO: 29 mg/kg (1989) & 129 mg/kg (1996) & 143 mg/kg (1986)  
ORL-RAT LD50: 27 mg/kg (1991)  
ORL-MUS LD50: 27 mg/kg (CLDND)  
ORL-BWD LD50: 23700 ug/kg (1983)  
SCU-RAT LD50: 45100 ug/kg (1961)  
SCU-MUS LD50: 23060 ug/kg (1961)  
ITR-RAT LD50: 47500 ug/kg (1961)  
IPR-MUS LD50: 28mg/kg (1948)  
IVN-MUS LD50: 19mg/kg (CLDND)  
UNR-MUS LD50: 27 mg/kg (1952)  
SKIN-RBT LD50: 20 mg/kg (1991)

**Target Organ Data:**  
Brain and coverings (increased cranial pressure)  
Peripheral nerve & sensation [spastic paralysis with/without sensory sense organs and special senses (mydriasis)]  
Behavioral (general anesthetic, somnolence, convulsions or effect on seizure threshold, change in motor activity, coma, headache, irritability)  
Cardiac (arrythmias, pulse rate decreased with fall in BP, change in force of contraction, other changes)  
Vascular (BP lowering)  
Respiratory, Lungs, Thorax (acute pulmonary edema, dyspnae, respiratory stimulation, other changes)

**SECTION 11 : TOXICOLOGICAL INFORMATION (cont.)**

Gastrointestinal (hypermotility, diarrhea)  
Kidney, Ureter, Bladder (other changes)  
Only selected registry of toxic effects of chemical substances (RTECS) data is presented here. See actual entry in RTECS for complete information.

**SECTION 12 : ECOLOGICAL INFORMATION**

Data not yet available.

**SECTION 13 : DISPOSAL CONSIDERATIONS**

Contact a licensed, professional waste disposal service to dispose of this material.  
Observe all Federal, State and local environmental regulations.

**SECTION 14 : TRANSPORT INFORMATION**

Domestic (Land, D.O.T.)

**Proper Shipping Name:** SODIUM AZIDE  
**Hazard Class:** 6.1  
**UN/NA:** UN1687  
**Packing Group:** II

**SECTION 15 : REGULATORY INFORMATION**

European Information:

**Ingredient:** Sodium Azide (26628-22-8)  
**EC Index #:** 011-004-00-7 Very Toxic  
**R:** 26/27/28 -Very toxic by inhalation, in contact with skin and if swallowed. Irritant.  
**R:** 36/37/38 -Irritating to eyes, respiratory system and skin  
**R:** 40 -Possible risk of irreversible effects  
**S:** 36/37/39 -Wear suitable protective clothing, gloves and eye/face protection.

**SECTION 15 : REGULATORY INFORMATION (cont.)**

**Reviews, Standards, and regulations:**

**OEL = MAK**

**OEL-Australia** (TWA 0.1 ppm, 1993), **Belgium** (STEL 0.1 ppm, 1993), **Denmark** (TWA 0.3 mg/m<sup>3</sup>, 1993), **Finland** (TWA 0.1 ppm, 1993), **France** (STEL 0.1ppm, 1993), **Germany** (TWA 0.07 ppm, 1993), **Netherlands** (TWA 0.1 ppm, 1993), **Switzerland** (TWA 0.1 ppm, 1993), UK (TWA 0.1 ppm, 1993), in **Bulgaria, Colombia, Jordan, Korea, New Zealand, Singapore, Vietnam** check ACGIH TLV

**NIOSH:** Rel to Sodium Azide, as HN3-Air:CL 0.1 ppm (SK)  
NIOSH DHHS # 92-100, 1992

**NOHS 1974:** HZD 68820; NIS 13; TNF 877; NOS 10; TNE 5953

**NOES 1983:** HZD 68820; NIS 19; TNF 3640; NOS 27; TNE54959; TFE 38370

**EPA GENETOX PROGRAM 1988:**

**Positive:** L5178Y cells in vitro-TK test, d-melanogaster sex-linked lethal, *S. cerevisiae* gene conversion and forward mutation and reversion

**Negative:** In vitro cytogenetics-human lymphocyte, sperm morphology-mouse, in vitro UDS-human fibroblast, TRP reversion

**Inconclusive:** carcinogenicity-mouse/rat, TRP reversion

**EPA TSCA Section 8(B) Chemical Inventory**

**EPA TSCA Section 8(D) Unpublished health/safety studies on EPA IRIS database**

**EPA TSCA Test submission (TSCATS) database, Apr 1997**

**NIOSH Current Intelligence Bulletin 13, 1976**

**NTP Carcinogenesis studies (GAVAGE): No evidence: Rat -NTPTR NTP-TR-389,91**

**U.S Information**

This product is subject to SARA Section 313 reporting requirements

**SECTION 16 : OTHER INFORMATION**

No additional data available.

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Prepared by: Amresco Inc  
Phone Number: (800) 448-4442 (U.S.A)  
Emergency Number: (800) 424-9300 (CHEMTREC)

THE FOLLOWING COMPOUND IS FOUND IN OUR  
**STOP N SOLUTION**

**SECTION 1 : PRODUCT IDENTIFICATION**

**Synonyms:** Oil of Vitriol; Babcock Acid; Sulphuric Acid

**CAS No.:** 7664-93-9

**Molecular Weight:** 98.08

**Chemical Formula:** H<sub>2</sub>SO<sub>4</sub> in H<sub>2</sub>O

**Product Codes:**

*J.T. Baker:* 5030, 5137, 5374, 5802, 5815, 5858, 5889, 5897, 5960, 5961, 5971, 5997, 6902, 9671, 9673, 9674, 9679, 9680, 9681, 9682, 9684, 9687, 9691, 9693, 9694,

*Mallinckrodt:* 2468, 2876, 2878, 2900, 2904, 3780, 4222, 5524, 5557, H644, H976, H996, V344, V651, XL003

**Company Identification:**

Mallinckrodt Baker, Inc.  
222 Red School Lane

**Phillipsburg, NJ 08865**

24-hour Emergency Telephone: (908) 859-2151 CHEMTREC:1-800-424-9300

National Response in Canada: CANUTEC - (613) 996-6666

Outside US and Canada: Chemtrec – (703) 527-3887

**SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS**

**Ingredient:** Sulfuric Acid

**CAS No.:** 7664-93-9

**Percent:** 52 - 100%

**Hazard:** YES

Water

**CAS No.:** 7732-18-5

**Percent:** 0 - 48%

**Hazard:** NO

**SECTION 3 : HAZARDS IDENTIFICATION**

**Emergency Overview:**

**POISON! DANGER! CORROSIVE LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR CONTACTED WITH SKIN. HARMFUL IF INHALED. AFFECTS TEETH. WATER REACTIVE. CANCER HAZARD. STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID CAN CAUSE CANCER.** Risk of cancer depends on duration and level of exposure.

**SECTION 3 : HAZARDS IDENTIFICATION (cont.)**

**SAF-T-DATA™ Ratings:**

Health rating: 4 – Extreme (Poison)

Flammability rating: 0 – None

Reactivity rating: 2 – Moderate

Contact rating: 4 – Extreme (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White (Corrosive)

**Potential Health Effects:**

**Inhalation:**

Inhalation produces damaging effects on the mucous membranes and upper respiratory tract. Symptoms may include irritation of the nose and throat, and labored breathing. May cause lung edema, a medical emergency.

**Ingestion:**

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach, leading to death. Can cause sore throat, vomiting, diarrhea. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations, and scanty urine may follow ingestion or skin contact. Circulatory shock is often the immediate cause of death.

**Skin Contact:**

Corrosive. Symptoms of redness, pain, and severe burn can occur. Circulatory collapse with clammy skin, weak and rapid pulse, shallow respirations and scanty urine may follow skin contact or ingestion. Circulatory shock is often the immediate cause of death.

**Eye Contact:**

Corrosive. Contact can cause blurred vision, redness, pain, and severe tissue burns. Can cause blindness.

**Chronic Exposure:**

Long-term exposure to mist or vapors may cause damage to teeth. Chronic exposure to mists containing sulfuric acid is a cancer hazard.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems or impaired respiratory function may be more susceptible to the effects of the substance.

**SECTION 4 : FIRST AID MEASURES**

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

**SECTION 4 : FIRST AID MEASURES (cont.)**

**Ingestion:**

DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

**Skin Contact:**

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Excess acid on skin can be neutralized with a 2% solution of bicarbonate of soda. Call a physician immediately.

**Eye Contact:**

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

**SECTION 5 : FIRE FIGHTING MEASURES**

**Fire:**

Concentrated material is a strong dehydrating agent. Reacts with organic materials and may cause ignition of finely divided materials on contact.

**Explosion:**

Contact with most metals causes formation of flammable and explosive hydrogen gas.

**Fire Extinguishing Media:**

Dry chemical, foam or carbon dioxide. Do not use water on material. However water spray may be used to keep fire exposed containers cool..

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Structural firefighter's protective clothing is ineffective for fires involving this material. Stay away from sealed containers.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES**

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda, ash, lime), then absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as sawdust. Do not flush to sewer! US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll-free number for the Coast Guard National Response Center is (800) 424-8802.

**SECTION 7 : HANDLING AND STORAGE**

Store in a cool, dry, ventilated storage area with acid-resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, always add the acid to water; never add water to the acid. When opening metal containers, use non-sparking tools, because of the possibility of hydrogen gas being present. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

**SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION**

**Airborne Exposure Limits:**

**Chemical Name:** Sulfuric Acid

**ACGIH Threshold Limit Value (TLV):** 1 mg/m<sup>3</sup> TWA, 3 mg/m<sup>3</sup> (STEL)

**OSHA – Permissible Exposure Limit (PEL):** 1 mg/ m<sup>3</sup> TWA

Suspected human carcinogen for sulfuric acid contained in strong inorganic acid mists.

**Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposure below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the containment at its source, preventing dispersion of it into the general work area.

**Personal Protection Equipment:**

**Eyes:**

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick drench facilities in work area.

**Skin:**

Wear impervious protective clothing, gloves, lab coat, as appropriate to prevent skin contact..

**Respirators:**

A respiratory protection program that meets OSHA's 29 CFR §1910.134 must be followed whenever workplace conditions warrant a respirator's use.

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES**

**Physical State:** Liquid

**Appearance:** Clear, colorless – oily liquid.

**Odor:** Odorless.

**Solubility:** Miscible with water, liberates much heat.

**Specific Gravity:** 1.84 (98%), 1.40 (50%), 1.07 (10%)

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES (cont.)**

**pH:** 0.3 (1N solution ca. 5% w/w)  
1.2 (0.1 N ca. 0.5% w/w)  
2.1 (0.01N ca. 0.05% w/w)

**% Volatiles by Volume @ 21° C (70F):** No information found

**Boiling Point:** ca. 290 deg C (ca. 554 F).

**Melting Point:** 3C (100%), -32C (93%), -38C (78%), -64C (65%)

**Vapor Density:** 3.4

**Vapor Pressure:** 1 mm Hg @ 145.8C (295F).

**Evaporation Rate (BuAc=1):** No information found

**SECTION 10 : STABILITY AND REACTIVITY**

**Stability:**

Stable under ordinary conditions of use and storage. Concentrated solutions react violently with water, spattering and liberating heat.

**Hazardous Decomposition Products:**

Toxic fumes of oxides of sulfur when heated to decomposition. Will react with water or steam to produce toxic and corrosive fumes. Reacts with carbonates to generate carbon dioxide gas, and with cyanides and sulfides to form poisonous hydrogen cyanide and hydrogen sulfide respectively.

**Incompatibilities with Other Materials:**

Water, potassium chlorate, potassium perchlorate, potassium permanaganate, sodium, lithium, bases, organic material, halogens, metal acetylides, oxides and hydrides, metals (yields hydrogen gas), strong oxidizing and reducing agents and many other reactive substances.

**Conditions to Avoid:**

Heat, moisture, incompatibles.

**Hazardous Polymerization:**

Will not occur.

**SECTION 11 : TOXICOLOGICAL INFORMATION**

**RTECS#:**

**CAS# 7664-93-9:** WS5600000

**LD50/LC50:**

<b>Inhalation, rat:</b>	LC50 = 510 mg/m <sup>3</sup> /2H
<b>Oral, rat:</b>	LD50 = 2140 mg/kg
<b>Eye, rabbit:</b>	Standard Draize = 250 ug (severe)

**SECTION 11 : TOXICOLOGICAL INFORMATION (cont.)**

**Carcinogenicity:** CAS#: 7664-93-9

Cancer Status: The International Agency for Research on Cancer (IARC) has classified "strong inorganic mists containing sulfuric acid" as a known human carcinogen, (IARC category 1). This classification applies only to mists containing sulfuric acid and not to sulfuric acid or sulfuric acid solutions.

**Epidemiology:** No data available.

**Reproductive Effects:** No data available.

**Neurotoxicity:** No data available.

**Other Studies:** No data available.

**Cancer Lists:**

Ingredient	-NTP Carcinogen		
	Known	Anticipated	IARC Category
Sulfuric Acid (7664-93-9)	No	No	None

**SECTION 12 : ECOLOGICAL INFORMATION**

**Environmental Fate:**

When released into the soil, this material may leach into groundwater. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition and by dry deposition.

**Environmental Toxicity:**

LC50 Flounder, 100 to 330 mg/l/48 hr aerated water/Conditions of bioassay no specified;

LC50 Shrimp, 80 to 90 mg/l/48 hr aerated water/Conditions of bioassay not specified;

LC50 Prawn, 42.5 ppm/48 hr salt water/Conditions of bioassay not specified.

This material may be toxic to aquatic life.

**SECTION 13 : DISPOSAL CONSIDERATIONS**

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed of in an RCRA waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

**SECTION 14 : TRANSPORT INFORMATION**

**U.S.A. (Land, D.O.T.):**

**Shipping Name:** SULFURIC ACID (with more than 51% Acid)  
**Hazard Class:** 8  
**UN Number:** UN 1830  
**Packing Group:** II

**Canada (T.D.G.):**

**Shipping Name:** SULFURIC ACID (with more than 51% acid)  
**Hazard Class:** 8 (9.2)  
**UN Number:** UN 1830  
**Packing Group:** II

**SECTION 15 : REGULATORY INFORMATION**

**Chemical Inventory Status – Part 1:**

<b>Ingredient</b>	TSCA	EC	Japan	Australia
Sulfuric Acid (7664-93-9)	YES	YES	YES	YES
Water (7732-18-5)	YES	YES	YES	YES

**Chemical Inventory Status – Part 2:**

<b>Ingredient</b>	Korea	DSL	NDSL	Phil.
Sulfuric Acid (7664-93-9)	YES	YES	NO	YES
Water (7732-18-5)	YES	YES	NO	YES

**Federal, State & International Regulations – Part 1:**

<b>Ingredient</b>	-SARA 302-	-----SARA 313-----		
	RQ	TPQ	List	Chem Catg
Sulfuric Acid (7664-93-9)	1000	1000	YES	NO
Water (7732-18-5)	NO	NO	NO	NO

**Federal, State & International Regulations – Part 2:**

<b>Ingredient</b>	CERCLA	-RCRA-	-TSCA-
		261.33	8(d)
Sulfuric Acid (7664-93-9)	1000	NO	NO
Water (7732-18-5)	NO	NO	NO

**Section 313:**

This chemical is not a high enough concentration to be reportable under Section 313. No chemicals are reportable under Section 313.

**Chemical Weapons Convention:** NO

**TSCA 12 (b):** NO

**SECTION 15 : REGULATORY INFORMATION (cont.)**

<b>CDTA:</b>	YES
<b>SARA 311/312: Acute:</b>	YES
<b>Chronic:</b>	YES
<b>Fire:</b>	NO
<b>Pressure:</b>	NO
<b>Reactivity:</b>	YES (Pure/Liquid)
<b>Australian Hazchem Code:</b>	2P
<b>Poison Schedule:</b>	None allocated.

**WHMIS:**

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

**SECTION 16 : OTHER INFORMATION**

**NFPA Ratings:**

Health:	3
Flammability:	0
Reactivity:	2
Other:	Water reactive

**Label Hazard Warning:**

POISON! DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED OR CONTACTED WITH SKIN. HARMFUL IF INHALED. AFFECTS TEETH. WATER REACTIVE. CANCER HAZARD. STRONG INORGANIC ACID MISTS CONTAINING SULFURIC ACID CAN CAUSE CANCER. Risk of cancer depends on duration and level of exposure.

**Label Precautions:**

Do not get in eyes, on skin, or on clothing.  
Do not breathe mist.  
Keep container closed.  
Use only with adequate ventilation.  
Wash thoroughly after handling.  
Do not contact with water.

**Label First Aid:**

In all cases call a physician immediately. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before re-use. Excess acid on skin can be neutralized with a 2% bicarbonate of soda solution. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

**Product Use:**

Laboratory Reagent

**DISCLAIMER:**

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Prepared by: Environmental Health & Safety  
Phone Number: (314) 654-1600 (U.S.A)

THE FOLLOWING COMPOUND IS FOUND IN OUR  
**TMB** SUBSTRATE HRP

**SECTION 1 : PRODUCT IDENTIFICATION**

**Name:** 3,3',5,5' Tetramethylbenzidine Liquid Substrate System

**CAS No.:** 54827-17-7

**Product #:** TMBE- 25S

**Manufacturer Information:**

Moss, Inc.

P.O. Box 189

Pasadena, MD 21123

PH: (410) 768-3442

Toll-free: (800) 445-6447

**SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS**

**Ingredient:** 3,3',5,5' Tetramethylbenzidine

**CAS No.:** 54827-17-7

**EC No.:** 259-364-6

**SECTION 3 : HAZARDS IDENTIFICATION**

**Label Precautionary Statements:**

HARMFUL

IRRITATING TO EYES, RESPIRATORY SYSTEM AND SKIN.

HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN.

AVOID CONTACT WITH METALS.

AIR AND LIGHT SENSITIVE.

REFRIGERATE FOR BEST STORAGE.

**SECTION 4 : FIRST AID MEASURES**

**Eye Contact:**

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

**Skin Contact:**

In case of contact, immediately wash skin with soap and copious amounts of water.

**Ingestion:**

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

**SECTION 5 : FIRE FIGHTING MEASURES**

**Extinguishing Media:**

Water spray. Noncombustible. Use extinguishing media appropriate to surrounding fire conditions.  
Use water spray to cool exposed containers.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES**

**Instructions:**

Evacuate area and ventilate area. Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves. Absorb on sand or vermiculite and place in closed containers for waste disposal. Avoid splashing.

**SECTION 7 : HANDLING AND STORAGE**

**Instructions:**

Refer to Section 8.

**SECTION 8 : EXPOSURE CONTROLS/PERSONAL PROTECTION**

Chemical safety goggles  
NIOSH/MSHA-approved respirator  
Use only in a chemical fume hood  
Compatible chemical-resistant gloves  
Avoid any skin or clothing contact.  
Wash thoroughly after handling.  
Keep tightly closed.  
Refrigerate.

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES**

<b>Appearance:</b>	Clear, very pale amber solution.
<b>Melting/Freezing Point:</b>	0° C (water)
<b>Boiling Point:</b>	100°C (water)
<b>Solubility:</b>	Dilutable in water

**SECTION 10 : STABILITY AND REACTIVITY**

**Hazardous Combustion or Decomposition Products:**

Toxic fumes of carbon monoxide, carbon dioxide, nitrous oxides, hydrogen chloride gas.

**Incompatibles:**

Bases, amines, alkali metals, copper and copper alloys.

**SECTION 11 : TOXICOLOGICAL INFORMATION**

**Acute Effects:**

Harmful if swallowed, inhaled, or absorbed through skin. Causes eye and skin irritation. Material is irritating and destructive to tissue of the mucous membranes and upper respiratory tract.

**Chronic Effects:**

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly tested.

**RTECS #:**

DV2300000

**Toxicity Data:**

See actual entry in RTECS for complete information.

**SECTION 12 : ECOLOGICAL INFORMATION**

Data not yet available.

**SECTION 13 : DISPOSAL CONSIDERATIONS**

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber. Observe all federal, state and local environmental regulations.

**SECTION 14 : TRANSPORT INFORMATION**

Does not need to be shipped as hazardous.

Ship labeled "**Do Not Expose To Heat**".

May be shipped with ice or ice packs.

**SECTION 15 : REGULATORY INFORMATION**

Data not available.

**SECTION 16 : OTHER INFORMATION**

Good housekeeping procedures and laboratory practice is the best preventative. Use in well ventilated areas. Store in refrigerated conditions. Do not allow product to enter storm or sanitary sewers, lakes, rivers, streams, or public water supplies. Notify local authorities if this happens or is threatened.

**DISCLAIMER:**

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. Moss Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.

Manufactured by: Moss Inc.,  
P.O. Box 189, Pasadena,  
MD 21123  
PH: (410) 768-3442  
Fax: (410)-768-3971

**THE FOLLOWING COMPOUND IS USED AS A PRESERVATIVE IN  
SAMPLE and TRACER DILUENTS, CONJUGATES, PREDILUTED STANDARDS  
and CONTROLS, and WASH CONCENTRATES**

**SECTION 1 : PRODUCT IDENTIFICATION**

**Product Name:** Proclin 300 Preservative  
**Synonyms:** Proclin 300, 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-4-isothiazolin-3-one  
**Product Number:** 48127  
**CAS No.:** 26172-55-4 and 2682-20-4  
**Chemical Formula:** C<sub>4</sub>H<sub>4</sub>CINOS and C<sub>4</sub>H<sub>5</sub>NOS  
**Manufacturer:** Supelco, Inc.  
 595 N. Harrison  
 Bellefonte, PA 16823-0048  
 PH: 814-359-3441

**SECTION 2 : COMPOSITION/INFORMATION ON INGREDIENTS**

Active Ingredients:	Percentage	PEL (Units)	TLV (Units)
5-chloro-2-methyl-4-isothiazolin-3-one:	2.1 – 2.9 %	N/A	0.1 MG/M3
2-methyl-4-isothiazolin-3-one:	0.6 – 1.1 %	N/A	0.1 MG/M3
<b>Inerts:</b>			
Modified Glycol:	91 – 94 %	N/A*	N/A*
Alkyl Carboxylate:	3.0 – 3.6 %	N/A*	N/A*

*\* This material is not listed on the TSCA (Toxic Substances Control Act) inventory. This material is intended for research use only and may not be used for drug, household, or other purposes. It is subject to TSCA regulations at CFR 40 Part 720.36 which deals with the exemption of chemicals used in research and development from PMN (Premanufacture Notification) requirements. In addition, the burden of safe use of the material rests with you and therefore, it should be handled only by qualified persons trained in laboratory procedures and good safety practices.*

**SECTION 3 : HAZARDS IDENTIFICATION**

**Effects of Overexposure:**  
 Burns eyes severely.  
 Harmful if swallowed.  
 Dermatitis.  
 Burns skin.  
 Systemic allergic reactions.

**SECTION 4 : FIRST AID MEASURES (FOR EXPOSURE TO CONCENTRATED SOLUTION)**

**Inhalation:**

Immediately move to fresh air.

**Ingestion:**

Never give anything by mouth to an unconscious person. Never try to make an unconscious person vomit. Give large amounts of water. Contact a physician.

**Skin Contact:**

Promptly wash skin with mild soap and large volumes of water.

**Eye Contact:**

Flush eyes with water for 15 minutes.

**SECTION 5 : FIRE FIGHTING MEASURES (FOR CONCENTRATED SOLUTIONS)**

**Flash Point:** 151° F      **ASTM#:** 3278-78

**Flammable Limits:** LEL = not given      UEL = not given

**Fire Extinguishing Media:**

Water, Carbon Dioxide, dry chemical powder or appropriate foam.

**Unusual Fire and Explosion Hazards:**

The following toxic vapors are formed when this material is heated to decomposition: hydrogen chloride, oxides of nitrogen and sulfur.

**SECTION 6 : ACCIDENTAL RELEASE MEASURES (FOR CONCENTRATED SOLUTIONS)**

**Spills:**

Deactivate spill area with freshly prepared solution of 5% sodium bicarbonate and 5% sodium hypochlorite in water. Apply solution to the spill area at a ratio of 10 volumes deactivation solution per estimated volume of residual spill to deactivate any residual active ingredient. Swirl the solution and let stand for 30 minutes. Take up with absorbent material. Rinse the container or area with water several times. DISPOSE OF DEACTIVATED PROCLIN SOLUTION AND WATER IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

**SECTION 7 : HANDLING AND STORAGE**

**Storage and Handling:** Store in sealed container in cool, dry location. Keep away from moisture. Keep away from oxidizers.

**Other Precautions:** Avoid eye or skin contact. Avoid breathing vapors.

**SECTION 8 : EXPOSURE CONTROL/PERSONAL PROTECTION**

**Respiratory Protection (Specific Type):** Wear NIOSH/OSHA approved respiratory protection.

**Protective GLOVES:** Wear butyl rubber gloves.

**Eye Protection:** Wear face shield. Wear goggles.

**Ventilation:** Use only in well ventilated area. Use only in exhaust hood.

**Special:** N/A

**Other Protective Equipment:** N/A

**SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance:** Light yellow liquid

**Boiling Point:** 189° C

**Melting Point:** -40° C

**Vapor Pressure:** 0.06 MM

**Vapor Density (AIR = 1):** > 1

**Specific Gravity:** 1.03 G/ml C (water=1) Percent Volatile by Volume

**Water Solubility:** 100

**Evaporation Rate:** < 1.0 (butyl acetate = 1)

**SECTION 10 : STABILITY AND REACTIVITY**

**Stability:** Stable

**Conditions to Avoid:** N/A

**Incompatibility:** Oxidizing agents. Reducing agents. Amines. AVOID TEMPERATURES OVER 25C C FOR PROLONGED PERIODS TO MINIMIZE DEGRADATION. CORRODES STEEL.  
pH RANGE: 4.1 (10% solution)

**Hazardous Decomposition Products:** hydrogen chloride, oxides of nitrogen and sulfur.

**Hazardous polymerization:** Will not occur.

**Conditions to Avoid:** N/A

**SECTION 11 : TOXICOLOGICAL INFORMATION**

**Oral Rat:** LD50 = 3723 mg/kg

**TLV:** N/A

**PEL:** N/A

**SECTION 12 : ECOLOGICAL INFORMATION**

ProClin 300 preservative is toxic to fish. Do not discharge untreated preservative, or spills, into municipal sewers or other bodies of open water. Many reagents that contain recommended in use levels of Proclin 300 preservative may be safely discharged to a municipal sewer system without treatment. Studies have shown that biological processes in a waste treatment facility are unaffected by 2 ppm or less of the combined active biocides. Discharges that may result in higher concentrations at the plant should be neutralized first. (Rohm and Haas data sheet)

**SECTION 13 : DISPOSAL CONSIDERATIONS**

**Waste Disposal Method:**

COMPLY WITH ALL APPLICABLE FEDERAL, STATE, or LOCAL REGULATIONS.

Containers of this material may be hazardous when emptied. Emptied containers retain product residues; handle as if they were full.

**SECTION 14 : TRANSPORT INFORMATION FOR CONCENTRATED SOLUTIONS**

Contact Supelco, Inc. for transportation information.

**SECTION 15 : REGULATORY INFORMATION**

This product is subject to regulation under the US Federal Food, Drug and Cosmetic Act and is therefore exempt from US toxic substances control act (TSCA) inventory listing requirements.

**SECTION 16: OTHER INFORMATION**

N/A

**DISCLAIMER :**

While the information and recommendations set forth herein are believe to be accurate as of the date hereof, Supelco, Inc. makes no warranty with respect thereto and disclaims all liability from reliance thereon.

PROCLIN<sup>®</sup> 300 is a product of: Supelco, Inc.  
Bellefonte, PA 16823  
Phone Number: (800) 359-3041  
(814) 359-3441

MSDS-Proclin300-Rev0-Dec04